

## Follow-Up Questions

### Activity 1: Paper Airplanes and the Methods of Science

1. In the plane experiment, what plane model did we use as our **control**? \_\_\_\_\_

Why do scientists like to use a **control group** in an experiment?

---

---

2. We changed two things in the plane experiment: 1) the **design** of the plane (the way it was folded), and 2) the \_\_\_\_\_ of the paper (by using heavier paper).

3. There are two types of **variables** that scientists look at when designing experiments; they are the **independent variables** and the **dependent variables**. You saw that different plane designs made with different weights of paper made the planes fly different distances. The variables that we changed, like the design or paper weight, are called \_\_\_\_\_ **variables**. When we measured how far the plane flew we were measuring the \_\_\_\_\_ **variable**.

4. Describe why scientists prefer to use the **metric system** of measurement.

---

5. Look at the **bar graph** (*page 3*) that summarizes all the results from 4<sup>th</sup> and 5<sup>th</sup> grade classes at East Aiken last year. What design seemed to do best? \_\_\_\_\_

What design seemed to do worst? \_\_\_\_\_

What conclusions can you draw about the three plane **designs** (an **independent variable**) on how far the plane flew (***dependent variable***)?

---

---

What conclusions can you draw about the effect of the **weight** of the plane (an **independent variable**) on how far the plane flew (***dependent variable***)?

---

---

6. Figure out if your group's plane design flew farther than the **same plane design** flown by other students at your school. You must first calculate your group's **Average Distance Thrown**.

*Add together the distance of all eight throws for both Throw 1 and Throw 2. Sum = \_\_\_\_\_ cm*

*Now divide this sum by 8 to get the **average** for your group. \_\_\_\_\_ / 8 = \_\_\_\_\_ cm.*

**School's Average Distance minus your group's Average Distance equals The Difference**

\_\_\_\_\_ cm - \_\_\_\_\_ cm = \_\_\_\_\_ cm

Did your group's plane design fly farther, shorter, or the same distance as the School's Average?

\_\_\_\_\_

Graph your group's **Average Distance Thrown** result for your plane design on top of the completed **bar graph** (below) that illustrates your school's Distance Thrown Averages.

7. What is the importance of having **repeated trials** (in this case repeated throws) in an experiment?

\_\_\_\_\_

### The Scientific Method--Plane Experiment Results

